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12/22/2015

Dec. 22, 2015 – In the spirit of giving this holiday season, the College of Engineering at Utah State University and ICON Health & Fitness delivered a much anticipated gift to the staff and clients at Logan's Common Ground Outdoor Adventures.

On Tuesday, USU and ICON donated a student-built side-by-side tandem cycle that helps make outdoor cycling adventures possible for persons with disabilities.



Members of the media were in attendance and interviewed students, faculty and other people who helped create this unique quadricycle dubbed "Tandemonium."

Tandemonium was designed and built by a team of undergraduate students in the department of mechanical and aerospace engineering as part of their spring 2015 senior capstone project. Icon Health & Fitness helped fund the project and offered expert mentoring and manufacturing support along the way.

The two-seater cycle was completed in April and has since undergone some minor modifications in preparation for delivery.

In designing the bike, students concentrated on four important aspects: safety, accessibility, durability and portability. Safety challenges included turning radius, braking distance and visibility. The team wanted Tandemonium to be easily accessible for all body types and to be strong enough to ensure durability, but lightweight enough to be easy to transport. Tandemonium is unique because riders can use their feet or a hand crank to operate it.



Student designers say they were thrilled to be part of such an ambitious project.

"It was so easy to get tunnel vision and just design your part," said student Laura Birkhold. "Everyone brought a different experience and expertise to the table, without which we wouldn't have been able to build the bike."

Tandemonium taught the senior design team how to effectively communicate, work together and overcome problems, an invaluable experience for their future careers as engineers. They also learned how to work together even when difficult challenges came up.

"My favorite part was seeing it all come together in the end," added Birkhold. "For so long the bike was just a model on a computer screen or a list of parts we had to source. Seeing it actually in front of me and getting to ride it was the most rewarding experience of the whole project."

Sunrise Cyclery in Logan also played an important part in Tandemonium's design and construction. The local company provided parts and information as well as expertise about bike operation and safety.

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